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NEW ECONOMY
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KEY FINDINGS AND ISSUES

- Despite national growth of the New Economy and exports, Maricopa County is overly concentrated in a few New Economy industries, and contributions of exports to the county's economy are declining. What are the reasons for these weaknesses? Can investments (e.g., improvements in transportation systems, telecommunications infrastructure) contribute to improving this situation?

- Increasing international trade, investment, communications and business alliances are driving globalization, which is a critical factor in the New Economy. What transportation facilities and services are required to serve global markets? How can these facilities and services be protected and enhanced? What does this imply in terms of regional transportation assets, such as Sky Harbor International Airport and the North American Free Trade Agreement (NAFTA) Trade Corridor (I-19/I-10/US 93)?

- Human capital (the knowledge and innovation capacities of people), linked via telecommunication and information systems, is the foundation of the New Economy. What effect will future telecommunication and information systems have on transportation demand? Will the net effect be increased demand for face-to-face contact due to expanded opportunities, or will it be reduced demand due to the substitution of telecommunications for travel? What trends are emerging in Maricopa County regarding these factors?

- The importance of education, in terms of both achievement and educational facilities themselves, is growing in the New Economy. Maricopa County appears to be hindered by low educational achievement levels. What role can government and industry play in improving access to educational and employment-related opportunities?

- An increasingly important factor in attracting and retaining New Economy workers and businesses is quality of life and place, as measured by such factors as recreational and cultural opportunities, as well as social environment. While Maricopa County is well positioned in terms of recreational opportunities, it is perceived as less attractive than competing regions with respect to cultural opportunities. How can some of the significant recreational and cultural resources of the region (e.g. Heard Museum, Scottsdale Center for the Arts, Desert Botanical Garden) be better promoted, and can transportation help the county improve its reputation relative to these opportunities? In addition, how can quality of life be maintained in spite of large projected population increases?

- The skills and experience required by workers in the New Economy may not be accessible to inner city residents. This so-called digital divide appears to be

contributing to and possibly accelerating the spatial mismatch between inner city residents and suburban jobs. What transportation systems can serve the apparently smaller and deconcentrated businesses favored in the New Economy? Can these businesses be attracted to inner city locations and what incentives might cause this to occur? How can transportation access to such business and educational facilities be improved for inner city residents? Can investments in telecommunications infrastructure reduce the barriers between inner city residents and suburban-based high technology industries? What role can and should our schools play in overcoming the digital divide?

- The speed and complexity of the New Economy calls for a regionally coordinated approach to economic development. Maricopa County appears to be improving its coordination of regional economic development efforts through the Greater Phoenix Economic Council (GPEC). What additional resources and support does GPEC need to ensure increasingly coordinated regional economic development?

THE NEW ECONOMY AND GLOBALIZATION

- **National Findings**: The New Economy and globalization are having increasingly profound effects on the growth of U.S. cities and their suburbs. Underlying the New Economy is a digital revolution capable of accelerating the speed at which information is processed and removing geographic limits to production. Increasing international trade, investment, communications and business alliances are driving globalization.

  - The New Economy is about much more than high technology and new industries. Increasingly, the New Economy is about new sources of competitive advantage for all industries via increasing speed, quality, flexibility, knowledge and networks. Knowledge is the raw material of the New Economy, and human capital is its embodiment. The new model is one of flexible specialization by firms and individuals, in which the emphasis is on decentralization, specialization and constant learning. The overall result is an emphasis on smaller-scale economic units and constant innovation.[1]

  - The importance of regions is increasing due to the shift to the New Economy and the changing nature of work. Industry clusters, which are competing, complementary and interdependent firms and industries, create wealth within regions via exports to other regions. Geographic clustering provides firms with access to specialized workforces, specialized suppliers and networks. These factors reduce transaction costs and time, which are critical to the success of fast-moving firms.[1]

  - The New Economy values the following: economic regions, distinctive quality of life, vital centers, choice for living and working, speed and adaptability and natural environments. Places with strong, responsive relationships between the economy and the community are successful and have sustained advantages and resilience.[1]

  - The New Economy has the following eight characteristics: technology is a given; globalism is here to stay; knowledge builds wealth; people are the most important raw material; there is no such thing as a smooth ride; competition is relentless; alliances are the way to get things done; and place still matters — but for different reasons.[2]

  - Urban economic development has been driven largely by global competitive forces, which have caused a shift from the old industrial economy that was dependent upon mass production to a more sophisticated technology- and knowledge-based system of production and services. Those cities able to become more globally integrated, particularly through international trade and

investments, have experienced significant success and will be increasingly successful in the future.[3]

- During the 1993-99 period, export sales from the 253 metropolitan statistical areas (MSAs) in the United States for which data are available rose from $373.7 billion to $545.6 billion, an increase of $171.9 billion, or 46%. The number of MSAs with $1 billion or more in exports increased from 75 in 1993 to 93 in 1999, a 24% increment.[4]

- The New Economy has also been called the "Cappuccino Economy," with the milk/foam layer on top representing fast growth companies, and the coffee layer on the bottom representing the more traditional old economy companies. We are now seeing mixing between the two as the two economies merge and the economy moves from mass production to flexible specialization.[5]

➢ **Regional Findings**: The New Economy in Maricopa County is concentrated in a small number of industries which are mainly focused on manufacturing (as opposed to services). In addition, despite increasing globalization, exports appear to be declining in Maricopa County. Both of these factors indicate that the region's economy is vulnerable to national and international economic shifts, and is failing to capitalize fully on growth in the New Economy and globalization.

- The economies of the 50 states were compared on the basis of 17 economic indicators to measure differences in the way their economies are structured and how well they operate in accordance with the New Economy. The 17 economic indicators fall into the following five aggregated categories: knowledge jobs, globalization, economic activity and competition, transformation to a digital economy and technological innovation capacity. Out of a total possible score of 100, Arizona scored 59.23, placing it 10th among the 50 states. Arizona was particularly strong in the economic dynamism category, but particularly weak in the globalization category.[6]

- Using previous research, a 1997 study identified the following eight industry clusters in Arizona: information, aerospace, health and biomedical, business services, minerals and mining, transportation/distribution, tourism and agriculture/food processing. In addition, three industry clusters were identified as "up and coming": optics, software and environmental technology. Within Maricopa County, the following five industry clusters were identified: high technology (a combination of information and aerospace industries), transportation/distribution, health and biomedical, tourism and business services.[7]

- Arizona's 1996 private sector employment in 14 high tech sectors was 7.8% of total employment, versus 6.2% nationally. Arizona had a much higher concentration of employment in the following four high tech sectors: electronic components and accessories (particularly semiconductors); aircraft and parts; guided missiles; space vehicles and parts; and search, detection and navigation instruments and equipment. Since Arizona's employment in the other 10 sectors was at or below the national average, the state's high-tech activities are concentrated in these four industries, of which several are closely tied to national defense.[8]

- While Arizona's employment in five high-tech service sectors increased by 55% (18,500 jobs) during the period 1991 to 1996, employment in the nine high-tech manufacturing sectors declined 8% (6,500 jobs).[2]

- In 1998, Phoenix ranked 30th among 315 metropolitan areas in its proportion of high tech output to the output of the whole economy, and 13th in the size of its high tech industry. On the basis of both concentration and size, Phoenix ranked 12th in the nation.[8]

- In Arizona, export-driven industries comprise 12% of Arizona employment. Because the value added from export driven industries is 45% above the state's average across all industries, export-driven industries comprise 17% of the state's corporate earnings. However, export-driven industries account for 20% less of the Arizona economy than of the national economy, due to the relatively low concentration of manufacturing industries in Arizona, except for high tech.[2]

- The real value of exports per employee in Arizona grew from 22% below the national average in 1991 to 22% above the national average in 1997. However, the Arizona figure dropped 25% in 1998, while the decline was only 4% nationally.[2]

- Exports from the Phoenix-Mesa MSA increased by $3.0 billion or 67% during the period 1993 to 1999, from nearly $4.5 billion in 1993 to over $7.5 billion in 1999. Despite this increase, the Phoenix-Mesa MSA declined in rank in terms of export value from 17th in 1993 to 19th in 1999.[4]

- In terms of globalism (as measured by employment in export industries), Arizona is below average, which is important since exports bring new money into the state. Arizona is above average in high-tech employment but is strong in only four sectors that focus primarily on aerospace and electronics. This makes the state vulnerable to economic fluctuations. In Phoenix, while employment remains concentrated in the Central Corridor and downtown,

high tech is located outside the primary core, which makes high-tech jobs difficult for central city residents to reach.[5]

- Despite the growth of the New Economy, employment in the construction industry in Maricopa County has increased during the last decade. In 1991, some 51,300 were employed in this industry, accounting for 5.1% of the county's total non-farm employment of 1,009,000. By 2000, Maricopa county's construction employment had increased to 119,200, equal to 7.5% of the county's total 1,582,000 non-farm employment. Construction employment in the county increased by 67,900, an increase of 132%, versus a 57% rise in total non-farm employment.[9]

- Phoenix is an "Urban Austin Powers," frozen in time, because it is a one-and-one-half industry town, dependent upon real estate (one industry) and tourism (one-half industry). Phoenix has never gone through an economic crisis of the kind seen in many other cities, and real estate has always bounced back. But real estate development benefits the wealthy few (the "real estate industrial complex"), while the majority of the population remains concentrated in a few sectors of the economy that are very vulnerable. For example, Maricopa County has a large number of service jobs, which tend to be low paying, and a large number of industrial jobs, which can be moved easily. We have had it good for a long time, but face a "creeping crisis" in education, leadership, cultural amenities and general quality of life.[10]

HUMAN CAPITAL

- **National Findings**: The New Economy is based on the knowledge and innovative capacities of human capital, which increasingly is the key competitive advantage for any region. This trend is projected to accelerate in the future, although employment tracks appear to be diverging into a two-tiered economy of high skills/high-pay and low-skills/low-pay.

  - For the 101 metropolitan areas in the U.S. Department of Housing and Urban Development's database, high-tech jobs grew during the period 1992 to 1997 at a rate of 31.2%, versus 13.6% for all jobs. High-tech jobs accounted for 18.4% of all new jobs in these areas, equivalent to almost 1.5 million new high-tech jobs.

  - Real average wages in high-tech industries increased by 19% during the period 1990 to 1998, versus an increase of 5% in the private sector as a whole. Furthermore, the average high tech job pays 78% more than the average non-high tech job: $53,000 versus $30,000.[11]

- At the center of the New Economy are knowledge and the innovation capacities of human capital. Urban centers need to access, create and use human capital in order to gain a competitive advantage in the New Economy. Those cities that tap their centers of knowledge, such as universities and research centers, will fuel economic growth by attracting and using human talent.[12]

- The New Economy is based on two interdependent but different skill sets: knowledge generation and knowledge deployment, with many cities having a comparative advantage in one or the other. Knowledge generation is dependent on the most highly educated and skilled people, who are typically found in first tier cities (e.g. New York, San Francisco, Boston, Los Angeles, Chicago). Knowledge deployment uses middle level education and skills.[12]

- Technology and the Internet have facilitated the remarkable growth of information industries, which encompass entertainment, telecommunications, computers, academia and more. Information industries' share of the U.S. economy has doubled over the last 20 years and now accounts for most of the nation's growth in productivity, as well as approximately two-thirds of the differential in economic growth between regions.[12]

- The proportion of full-time wage and salary workers who varied their work hours from the "9-to-5" norm was 27.6% in 1997, more than double the 12.4% in 1985. However, according to data from 1994-97, only 6% of employees had formal flexible work schedule arrangements. Flexible schedules were most common among workers whose jobs can be conducted efficiently regardless of start and end times. Examples include sales, executive, administrative and managerial employees, of whom over 40% had flexible schedules. Private sector employees had higher levels of flexible schedules than public employees (28.8% versus 21.7%). Within the private sector, service producing industries had the highest level of flexible schedules at 31.7%.[13]

- In 1992, the most recent year for which data are available, nearly one-half of the 17 million small businesses in the United States were home-based, and 14 million (82%) were owner-operated and had no paid employees.[14]

- For many reasons, including the nature of the work, the lack of equipment and unwilling managers, only an estimated 16% of the entire U.S. workforce can at present consider telecommuting. Only an estimated 2% of the workforce telecommutes on any given day, for reasons such as the desire for social interaction and the lack of personal self-discipline away from the office.[15]

- Total employment in the United States is projected to increase from 140.5 million in 1998 to 160.8 million in 2008, an increase of 20.3 million or 14%. The projected 1.4% annual rate of growth is 0.2 percentage points lower than during the preceding decade.[16]

- The service-producing (non-goods producing and non-agricultural) sector is expected to remain the dominant source of employment growth in the United States, accounting for 19.3 million, or 95%, of the projected new jobs in the United States from 1998 to 2008, and equal to an average annual growth rate of 1.8%. The goods-producing sector (including mining, construction and manufacturing) is projected to add only 222,000 new jobs over the same period, for an average annual growth rate of 0.1%.[16]

- Within the service-producing sector, the services and retail trade divisions are expected to account, respectively, for almost 12.0 million and 3.1 million new jobs over the 1998 to 2008 period, or 74% of total projected employment growth. The strongest among the other sectors will be government, with an expected increase of nearly 1.9 million jobs during this period, equal to 9% of the total projected job growth.[16]

- Nearly three-fourths of the projected job growth in the services division will occur in three industries: business services (4.6 million jobs), health services (2.8 million) and engineering, management, and other services (1.1 million).[16]

- The computer and data processing industry is expected to be the fastest growing industry in the entire economy, with a forecast increase from 1.6 million jobs in 1998 to 3.5 million in 2008. This increase of 1.9 million jobs represents an annual growth rate of 8.1%.

- Only four goods-producing industries are forecast to have above-average annual growth rates in employment during the period 1998 to 2008: medical equipment, instruments and supplies (1.8%); aerospace (2.0%); electronic components and accessories (2.2%); and miscellaneous transportation equipment (2.3%).

- Occupations requiring an associate degree or higher qualification will account for 40% of total job growth from 1998 to 2008, up from 25% from the previous decade. Balancing this, however, will be growth in occupations requiring no formal education or training beyond high school, which will account for 57% of job growth during the same period.[17]

- The increasing blur between the work and non-work life is redefining each. Reasons for this change include the following: people are now working longer; cottage/home-based industries are growing rapidly; business-to-business

transactions are increasing; globalization continues; personal communications systems (cell phones, pagers, e-mail, fax machines, etc.) are proliferating; and there is a skill shortage in the United States which is forcing businesses to go offshore.[18]

- Choice of residential location is growing, electronic connections between family and friends are increasing and work/life balance issues will continue to be a challenge.[18]

➢ **Regional Findings**: Despite the large number of higher learning institutions in the Greater Phoenix area, low educational attainment is likely to significantly hinder growth of the New Economy in the region.

- Non-farm employment in Greater Phoenix increased from 978,600 in 1991 to an estimated 1,538,900 in 2000, an increase of 560,300 or 57%. During this period, the proportion of jobs in the service sectors (e.g., finance, insurance and real estate; services and miscellaneous; and government) increased from 50% to 53%. Simultaneously, the proportion of jobs in manufacturing declined from 13% to 11%. The trade sector (retail and wholesale) declined slightly from 25% to 24%, while the construction sector (which is particularly vulnerable to cyclical economic fluctuations) increased from 5% to 7%.[19]

- The Phoenix-Mesa MSA was ranked 13th in the United States in number of high-tech jobs in 1997. In that year, the Phoenix-Mesa MSA had 123,320 high-tech jobs, equivalent to 10.2% of its total jobs. This figure represents an increase of 49,055, or 66.1%, from the number of high-tech jobs in 1992.[20]

- Employment in Greater Phoenix is projected to increase from 1,509,300 in 1999 to 1,811,000 in 2005, with the rate of growth expected to exceed the national growth rate. The fastest growing fields will be professional, technical and service occupations.[19]

- Verbal and math Scholastic Aptitude Tests (SAT) scores for college-bound seniors from Arizona were, respectively, 4% and 3% higher than the national average.[19] Average SAT scores may be a misleading indicator, however, since the state universities in Arizona do not require this test.

- In 1999-2000, Arizona spent only $4,754 per K-12 pupil, 49th in the nation and far below the national average expenditure of $6,585. The percentage of students graduating from high school was 77%, again 49th nationally and well below the national average of 86%. Furthermore, Arizona received only a "C" grade for preparing its students for college-level education and training in 2000.[21]

- Elementary school reading and math standardized test scores varied widely within Maricopa County in 1998 and correlated strongly with race. The median reading and math scores in inner city districts were 33 and 36, and 20% of the students were white. By contrast, in the northeast districts, the median reading and math scores were 73 and 71, and 87% of the students were white.[22]

- There are 26 institutions of higher learning in Greater Phoenix, with more than 203,000 students in 1999. These institutions include: Arizona State University (over 50,000 students at the main campus and two branches), with Bachelors, Masters and Ph.D. degree programs; the University of Phoenix (23,000 students), with Bachelors, Masters and Ph.D. programs; nine other four-year and graduate institutions (18,657 students); ten community colleges (102,000 students) with Associate degree programs; and five other institutions (nearly 9,000 students) with Associate degree programs.[19]

- Arizona is 12th in the nation in educational attainment, but this is due primarily to in-migration. Families relocating to the region from areas of the nation with higher-quality schools will insist that the Valley's schools provide a comparable education. The New Economy allows greater locational flexibility for workers as well as businesses. We need to focus on education policy and attainment if we want to attract and retain a skilled workforce. We must also focus on quality of life, protect and retain existing businesses and facilitate collaboration.[5]

- Intel's CEO is a resident of the Valley of the Sun and will not hire any more Silicon Valley employees due to the high cost of living and doing business there. Issues here in Phoenix include the quality of life, education, air quality and congestion. Access to engineering and technical talent draws high-tech firms such as Intel to the fringe of Greater Phoenix.[18]

- Education contributions are taken very seriously by high-tech companies. For example, Intel invested over $100 million in education last year. Contributions by parents and companies are funding education. While companies are paying their fair share locally, they will not pay twice, so government money must be prioritized. Corporations also tend to focus their philanthropy in their headquarters city while branch locations get a smaller piece of the pie.[18]

QUALITY OF LIFE/PLACE

- **National Findings**: The New Economy is based on the knowledge and innovation of talented individuals, who are highly mobile and demand a high quality of life in order to be attracted and retained. Regions able to offer a high quality of life, as measured by physical and cultural amenities, including a range of mobility

options, will be at a significant advantage in attracting and retaining such people, and will thrive in the New Economy.

- The importance of place is changing because information flows without geographic constraints. As a result, companies and people increasingly locate not where they must, but where they want to. Wherever intelligence clusters, whether in big cities, suburbs or small towns, wealth can be expected to accumulate.[12]

- Knowledge workers in the New Economy are able to take their skills and intellectual capital to different projects and locations of their choice. This, combined with networked communication and computing systems, empowers them to choose where they live and work. Knowledge workers also place a high value on balance between work and private life.[1]

- Research shows that quality of life is an especially important factor for high-tech businesses or those that employ highly skilled workers in knowledge-based services and production. Retention of workers is very important for high-tech firms, and in many cases is even more important than the recruitment of new migrants. The perception of a declining quality of life in a community leads to lower retention rates of skilled workers.[1]

- Despite the growing recognition that human capital is the central factor in regional growth, until recently economists and others have paid little attention to the factors associated with the geographic distribution of skilled workers. Recent research suggests that quality of place is a key factor in the geographic distribution of both human capital and industry, and therefore a key factor in regional growth.[23]

- Quality of place refers to amenities, such as parks, cultural offerings and educational institutions, and to the broader social environment. These are inherited, acquired and built-up characteristics of a place. Quality of place is necessary for cities to attract and generate human capital and to generate ideas.[23]

- The locational preferences of workers is an important factor in the location of firms. This is particularly true for firms where workers with high education and skill levels are a primary input to production, and for industries that are unconstrained in terms of proximity to customers or production resource bases. Furthermore, evidence suggests that highly skilled workers are attracted to high-amenity locations, independently of the number of such workers initially present at these locations.[23]

- In the New Economy, the competitive advantage of regions has shifted to those that can generate, retain and attract the best talent. Because knowledge workers balance economic opportunities and lifestyle when selecting a place to live and work, amenities and environmental quality are critical in the attraction of talent and the development of high-tech regional economies. The wealth of job opportunities open to knowledge workers allows them to choose cities and regions that are attractive places to live and work.[24]

- Leading high technology regions (e.g., Austin, Seattle, San Francisco, Boston) rate very highly in quality of place and have improved their environmental quality, natural amenities and lifestyle qualities to attract and retain talent. Examples include the development of bike paths, multi-use trails, parks and recreation areas, accessibility to water and cultural and social amenities. In addition, programs have been established to support local music scenes, youth-oriented cultures and demographic diversity. University districts have been a focus for lifestyle and recreational amenities.[24]

- Because of long working hours, the fast pace of work and tight deadlines, high-tech industry workers require amenities that blend seamlessly with work and can be accessed on demand. Access to water and water-based recreation is of particular importance to these workers, who also favor cities and regions that offer a range of experiences and are less concerned with "big ticket" amenities such as high arts and culture or professional sports. A city's so-called "coolness" (as measured by amenities like nightlife, bars and restaurants) and outdoor recreation are correlated with the attraction of knowledge workers.[24]

- The New Economy offers the potential for growth that is more compatible with environmental preservation and conservation than the old industrial economy. And the perceived "cleaner" nature of the New Economy enables diverging land uses, such as residences, workplaces and recreational areas, to be located adjacent to each other where permitted by zoning codes.[1]

- High-tech communities come in two forms and two cultures: hard technology (engineering, manufacturing, programming) which typically locates in suburbs, also known as "nerdistans"; and soft technology (marketing, public relations, media) which typically locates in urban cores, also known as "boutiques."[25]

- Nerdistans are science-based communities, typically located on the periphery of major urban areas, near centers of higher education with planned environments. Examples include: Irvine, California; Raleigh-Durham, North Carolina; The Woodlands, Houston, Texas; Piano and Richardson, Texas (outside Dallas). Boutiques are compact (and often expensive) cities with high appeal to information workers. These locations include San Francisco, Manhattan, Seattle and West Los Angeles.[25]

- **Regional Findings**: While Maricopa County has significant recreational opportunities of the kind valued by New Economy workers, it appears to be doing too little to preserve and increase these recreational opportunities. Furthermore, the relatively low ranking of arts, cultural and recreational amenities compared with peer cities could signal a decline in the ability to attract New Economy workers to the region.

  - During the period 1997 to 1999, public safety and crime, education and families and youth were consistently rated as the most important quality of life categories for Maricopa County residents surveyed. Compared to other western U.S. metropolitan regions, Maricopa County had somewhat more affordable housing and an average cost of living, as well as the highest property crime rate, the lowest per capita personal income and the least miles of transit service per resident. While crime is declining in the region, personal safety and crime was reported as the most important quality of life indicator in 1999.[26]

  - In 1999, nearly three out of four residents of Maricopa County surveyed indicated that the region's population is growing too fast, and only 5% stated that the region is doing a good job of preserving the desert. If given an opportunity to move out of the region tomorrow, 45% of the region's residents would do so, with the top three reasons as follows: too many people, too hot and crime.[26]

  - The top five factors that the region's residents valued in terms of a place to live and work in 1999 were: climate (33%), environment (11%), safety/security (10%), location/convenience (8%) and economy (7%).[26]

  - In 1999, 70% of Maricopa County residents surveyed had a one-way commute of 30 minutes or less. Except for residents with a commute time of 10 minutes or less, the commuting time would typically have to double in order to motivate a significant life change (e.g., moving to a different residence, shifting work schedule, looking for a new job).[26]

  - In importance in the regional quality of life, the quality and availability of arts, culture and recreational amenities were ranked ninth by Maricopa County residents surveyed and as the most important factor by 2%. Earnings by, and contributions to, non-profit arts and cultural institutions increased by 40% during the period 1996 to 1999, while attendance increased by 30%. During the period 1996 to 1998, attendance at professional sporting events increased by 85% due to the inception of the Arizona Diamondbacks.[27]

  - Maricopa County has an excellent climate (300 sunny days per year) as well as many outdoor recreational opportunities. Major recreational facilities within

the urban area include South Mountain Park (the largest municipal park in the world), the Phoenix Mountain Preserves, Echo Canyon Recreation Area, Reach 11 Recreation Area, Papago Park, Indian Bend Wash and Tempe Town Lake. Recreational facilities surrounding the urban areas include Tonto National Forest, Salt River Recreation Area and an extensive regional park system operated by Maricopa County.

- Major Maricopa County sports and cultural facilities include Bank One Ballpark (Arizona Diamondbacks); Sun Devil Stadium (Arizona Cardinals, ASU Sun Devils); America West Arena (Phoenix Suns, Phoenix Coyotes); Gammage Auditorium; Symphony Hall; Herberger Theater; Orpheum Theater; Sundome; Web Theatre; Heard Museum; Phoenix Art Museum; Phoenix Museum of History; ASU art museums; Arizona Science Center; Arizona Historical Society Museum; Scottsdale Center for the Arts; Phoenix Zoo and Desert Botanical Garden. In addition, there are a large number of annual special events, including the Phoenix Open Golf Tournament, Fiesta Bowl, Barret-Jackson Auto Auction, NASCAR Winston Cup, Scottsdale Arts Festival, Tempe Festival of the Arts, Chandler Ostrich Festival and Glendale Festival of Lights.

- The Phoenix-Mesa MSA is a relatively affordable major metropolitan area, as shown by its score on the American Chamber of Commerce Research Association composite cost of living index, which was 104.0 in second quarter 2000.[19]

- Maricopa County has numerous transportation connections, including interstate highways, urban freeways, airports and rail lines. Interstate highways connect the county to Southern California (I-10 and I-8), Tucson and Mexico (I-10 and I-19), New Mexico and Texas (I-10) and Flagstaff (I-17). Approximately 155 miles of urban freeways exist, most of which have been built since 1985, and significant increases in mileage are under construction or scheduled for completion by 2007.[19]

- Phoenix Sky Harbor International Airport is the fifth busiest airport in the world in number of takeoffs and landings, serves 33 million visitors annually via approximately 700 daily non-stop flights to approximately 100 destinations, and handled over 365,000 tons of air cargo in 1999 (up 80% since 1993). There are many general aviation airports in Greater Phoenix, including Williams Gateway, Scottsdale, Phoenix Deer Valley, Glendale Municipal, Phoenix-Goodyear and Mesa Falcon Field.[19]

- Two Class I railroads provide freight service to Phoenix: the Union Pacific and the Burlington Northern Santa Fe. These operators have eight active rail terminals in the Phoenix area: 9th Avenue/Buchanan, Mobest Freight Yard,

Glendale Auto Yard, Glendale Intermodal Yard, El Mirage Auto Distribution Center, 7th Street, Phoenix Auto Yard and Mesa Team Track.[28]

- What about Phoenix as a nerdistan? Phoenix is strong in hard technology at 2.5 times the national average, but this is limited primarily to electronics. Given that Phoenix has no "soft" high-tech clusters, how will Phoenix develop as a place for young, single place to live? What about for women who increasingly are not having children?[25]

- Maricopa County's principal economic amenity is the quality of life that comes from living in the desert, so we should strive to protect the desert; a good way to do that is via concentration of development. What are the benefits of concentration? Some concentration of urban amenities and transportation is more in keeping with the reality of the desert — although the real estate industrial complex here will try to quash this idea.[10]

URBAN REVITALIZATION AND THE DIGITAL DIVIDE

- **National Findings**: The value placed on intangible factors, such as interaction, accessibility, creativity and history, by New Economy workers has contributed to the economic recovery of many older inner cities. However, the types of skills demanded by New Economy employers may not be available to the existing population in many inner city neighborhoods. Furthermore, increases in housing prices and commercial rents may force out traditional residents and industries from inner-city areas.

  - During the period 1992 to 1997, the economies of some central cities experienced significant improvements, with much of this improvement due to the growth of high-tech industry. Improvements include the following: job growth (8.5%), business growth (3.7%), wage growth (4.8%), decline in unemployment (down 3.7 percentage points to 4.8%) and household income growth (3.5%).[20]

  - The vital centers of regions, towns and neighborhoods are valued by the New Economy. Such places promote interaction, accessibility and creativity, on which the New Economy depends. As a result, physical spaces where people come together are critical components of the New Economy. New Economy workers also value the integration of work and life that can take place in mixed-use neighborhoods and major activity centers, as well as adjacent to or within town centers.[1]

  - With the rise of suburbanization following World War II, America's down-towns lost housing and evolved into centers of employment and entertain-ment. Recently, demographics and a strong economy have been the driving

forces between a resurgence in downtown housing in the late-1990's. Increasing traffic congestion and commute times are also playing a part. Demographic groups behind this demand include households without children, the aging baby-boom cohort and immigrants. The strong economy is increasing rates of household formation, particularly among young professionals whose income levels enable them to live without roommates, which causes an increase in the number of required dwelling units. These trends are expected to continue during the coming decades.[29]

- During the period 1992 to 1997, high-tech jobs constituted almost 25% of all new jobs in cities, and the growth rate of high-tech jobs in cities was three times the overall job growth rate there. By comparison, the rate of high-tech job growth in suburbs was twice the overall job growth rate there. Some cities, such as Las Vegas, Nevada, and Mesa, Arizona, doubled their number of high-tech jobs.[30]

- One of the most surprising and important developments currently under way is the revitalization of some U.S. cities, driven largely by the New Economy. Such cities have growing "cyber districts" that are transforming formerly abandoned blocks of warehousing and manufacturing space into highly desirable spaces. Many of these have become neighborhoods with strong residential, retail and cultural components. In some cases, however, lower-income residents and small businesses have been driven out by dramatically rising rents.[12]

- The recovery of old industrial centers has been one of the most important phenomena of the digital revolution. Like emerging technology centers, the old industrial centers offer lower costs than first tier cities, but also have a rich mix of architecture, history, cultural activities, institutions of higher education, and good transportation infrastructure. Examples include Baltimore, Oakland, central Dallas, Cleveland, Denver and smaller old industrial communities.[12]

- Older, often vacant office buildings in central business districts across the country are being redeveloped as telecommunications carrier hotels, also known as "telco hotels." Most telco hotels are located downtown because telecommunication companies, such as AT&T, Qwest, MCI and Sprint, need to be located near the city's main fiber optic network. In addition, downtown is where most office buildings are located, and this is where most of the best customers for telecommunication services are located. While telco hotels use previously empty office buildings, they do not bring many people downtown because the building is packed with equipment and relatively few personnel.[31]

- Despite the strong economic recovery of central cities from 1992 to 1997, the economies of suburbs outpaced those of central cities in many ways: total job

growth was 17.8% in suburbs versus 8.5% in central cities; manufacturing increased by 7.0% in suburbs versus a decline of 5.4% in central cities; and service sector employment increased by 26.4% in suburbs versus 15.9% in central cities.[20]

- While central cities gained high-tech jobs from 1992 to 1997, suburbs had a still higher growth rate. Over this period, high-tech jobs increased by 34.7% in suburbs and only 26.7% in central cities.[20]

- From 1993 to 1999, export sales from the 253 MSAs for which data are available increased by 46%. By comparison, total export sales for the nation increased by 49%, indicating that areas outside MSAs, such as edge cities and rural locations, had stronger export sales growth than cities.[4]

- One of the biggest challenges facing cities is closing the growing digital divide with the suburbs, with at least three gaps confronting cities: access to computers is significantly lower for non-white groups (e.g., 46.6% of whites in the United States owned computers in 1998 versus 23.2% of African-Americans and Hispanics); as high-tech employment in the suburbs grows more quickly than in the central cities, central city residents may be left out of social and financial networks providing access to high-paying jobs and upward mobility; and the spatial mismatch between the available workforce in the city and employment in the suburbs may grow.[32]

- The success of the New Economy also has its downside, as evidenced by the pricing out of older industries and working class populations from their traditional locations, particularly in central cities, resulting in the emergence of a dual city of rich and poor. This problem is national in scope and cannot be solved by cities alone.[12]

➢ **Regional Findings**: The strong growth in high-tech employment in Maricopa County's suburban communities may signal the growth of a digital divide between central-city and suburban residents. This perception is reinforced by an analysis of the relative concentration of industry clusters across the region.

- The number of high-tech jobs in the Phoenix-Mesa MSA grew by 41,556, or 61.5%, from 1992 to 1997. However, the growth rate was 71.1% in the suburbs versus 55.3% in the central city.[33]

- During the period 1992 to 1997, the number of jobs in the central cities of the Phoenix-Mesa MSA (Phoenix, Tempe, Scottsdale and Mesa) grew by 27.5%. By contrast, employment in the surrounding communities grew by 51.9%. Over the same period, the population of the central cities grew by

21.8%, while the population of the surrounding communities grew by 45.3%.[20]

- The largest and most focused concentration of professional positions in Maricopa County remains in downtown and midtown Phoenix, with smaller concentrations in and around Sky Harbor International Airport, Tempe, Scottsdale and Metrocenter. By contrast, high-technology industries are relatively absent in central Phoenix. Software and information industries have a strong presence in Tempe and Scottsdale. High-tech manufacturing companies are generally located farther to the southeast and northwest.[22]

- Using five industry clusters, employment by geographic area (based on 13 sub-county areas) in 1994 was compared with population in order to measure relative industry concentrations. The Central City Village ranked first among 13 sub-county areas in the high technology cluster, with per capita, high-tech employment four times higher than in the county as a whole and 60% higher than in the second highest ranked sub-county area (Tempe). The transportation/distribution cluster was nine times higher in the Central City Village than in the county and over five times higher than in the second highest ranked area (South Mountain Village). The health and biomedical cluster was almost four-and-one-half times higher in the Central City Village than in the county and three times higher than in the second ranked sub-county area (Paradise Valley). The tourism industry cluster was highest in the Paradise Valley sub-county area, although it was spread through much of the metropolitan area (e.g., East Central Phoenix, Scottsdale and Central City Village). The business services cluster was almost five times more concentrated in the East Central Phoenix sub-county area than in the whole county, although the Central City Village and Tempe also had concentrations of at least double the county level.[7]

- The Central Phoenix Village and South Mountain Village, two of 13 sub-county areas analyzed in a 1997 study, are geographically adjacent. The Central Phoenix Village ranked first in geographic concentration of three of five industry clusters identified in Maricopa County (high technology, transportation and health/biomedical), second in one (business services) and fourth in the remaining (tourism). By contrast, while South Mountain Village ranked second in one industry cluster (transportation) and tenth or below in three categories. While in 1994 the average wage in the South Mountain Village was approximately equal to the Maricopa County average, wages in the Central City Village were the highest in the metropolitan area.[7]

- The United States has been through 10 years of revival, and Phoenix missed it — urban downtowns are key urban amenities and economic development advantages. We could stop the growth tomorrow — through regulations,

taxes, etc. — but saying that we have to offer balance is perceived as extremism; people say this is just the Wild West and we are all individuals. However, past leaders cooperated to bring water here and the only way rugged individualism worked was on a cooperative basis.[10]

- A big obstacle to developing a vibrant urban scene is land use regulation, which since World War II has encouraged the segregation of land uses and an auto-dependent land use pattern. Add to this the public and private disinvestment in central city areas that has come with the departure of much of the middle class to the suburbs.

ECONOMIC DEVELOPMENT

- **National Findings**: The New Economy requires an informed, comprehensive and coordinated approach to economic development, with a focus on labor force characteristics and quality of life.

  - The New Economy values a different community design, and the following 10 principles provide direction for community leaders when thinking about the Findings of the New Economy and livable communities: know thy economy — get beyond traditional players; be regional — the New Economy needs a livable region; recognize that knowledge loves quality; be fast and flexible; appreciate the vitality of centers; learn the value of fitting in; choose choice; help people get together; discover entrepreneurs by day, environmentalists by night; and realize that creativity wins.[1]

  - During the 21st Century, increases will occur in international trade and investment, transnational communications and cross-border alliances and industries. U.S. cities simply seeking to maintain their competitive position, let alone improve it, must supply the labor force, services and infrastructure to enable locally based, non-locally based domestic and foreign-owned firms to successfully participate in the international marketplace.[3]

  - Regions must make quality of place a central element of their economic development efforts in order to compete successfully in the age of talent. Investments should be made in outdoor, recreational and lifestyle amenities, such as pedestrian-friendly communities, bike lanes, multi-use trails and sponsored outdoor events. Commuting should be made easier between university districts, downtown and centers for high-tech businesses through the development of a range of mobility options. These could include both fixed guideway (light rail, commuter rail) and non-fixed guideway (bus) transit, as well as bike lanes. Smart growth and sustainable development — particularly sustainable use, preservation and revitalization of natural and cultural assets — should be encouraged regionally.[24]

- In conjunction with private business initiatives, local public policy can accelerate economic and demographic trends favoring a move back to the city. Two threshold conditions can be created via public policy in order to catalyze the downtown housing market: a safe, higher quality environment and investor confidence. Based on Denver's resurgence in downtown housing, 10 steps have been identified as public policy actions which may strengthen these two threshold conditions: housing must be downtown's political and business priority; downtown must be identifiable; downtown must be accessible; downtown must have new and improved amenities; downtown must be clean and safe; downtown must preserve and reuse old buildings; downtown regulations must be streamlined and support residential growth; city resources should be devoted to housing; the edge of downtown should be surrounded by viable neighborhoods; and downtown is never done.[29]

- Ten U.S. cities were profiled by the Department of Housing and Urban Development to show how the New Economy is affecting urban economies, and to highlight successful economic development strategies. The following are key building blocks of these strategies: strategic and inclusive planning; tending to the basics (i.e., public safety, water and sewers, trash collection, roads, education and business retention); infrastructure (especially telecommunications and transportation); human capital (e.g., workforce development initiatives, work-study programs); innovative financing techniques (e.g., tax increment financing, business improvement districts); implementation through public-private partnerships; regional collaboration; and effective marketing and promotion.[30]

- The viability of urban areas in the New Economy is dependent on the ability of a region to establish and nurture local industry clusters networked with the global business community.[12]

- Despite increasing globalization in the New Economy, enduring competitive advantage lies in location-specific competencies that allow a firm to prosper. These include knowledge, workforce skills, customer and supplier relationships, entrepreneurial infrastructure, and quality-of-place attributes. Knowledge of these characteristics enables economic development and political officials to adjust their strategies in order to succeed in the New Economy.[12]

- The technology sector is a leading indicator, and the spread of products to one-fourth of the population provides insight into the pace of change: electricity took 46 years to reach one-fourth of the population, while the Internet took seven years. The speed of change is making it difficult for business and government to respond in a timely manner.[25]

- The effect of the New Economy on the form of urban development is very broad, but also very strong. Communities have the ability to influence the effects of the New Economy via infrastructure, although this is largely invisible.[34]

- At the regional level, the digital economy is giving rise to global cities. Given the concentration of dot.coms, are venture capitalists the new land planners? At the regional level, numerous factors are important: talent, founders' ties, businesses, infrastructure, customers, venture capital and educational institutions.[34]

- Seven actions for building a "wired" and livable region: enhance wired live-work options, create collaborative and seamless work environments, link bricks to clicks through local e-commerce, create connected communities, ensure community access through local institutions, push city hall to offer e-services and e-forums and manage high-tech growth smart growth.[34]

- With respect to transportation and the digital economy, a number of factors should be considered: cross-cutting transportation issues, rising dynamic travel needs, home-based work as a complement to (not a substitute for) traditional work, intermodal dimensions to e-commerce (especially business to business), local delivery challenges for consumer e-commerce and access to goods and services as more important than mobility.[34]

➢ **Regional Findings**: Arizona has undertaken considerable efforts to understand its weaknesses relative to the New Economy and is making efforts to improve, particularly with regard to education. The Greater Phoenix Economic Council is well positioned to assist economic development efforts in Maricopa County. However, given the county's current weaknesses, economic development efforts remain very challenging.

- Despite the general slowdown in the national economy (as of early 2001), Arizona is an important player in the New Economy and remains a growth leader by most measures. Arizona's economic outlook is excellent for 2001. However, Arizona's leaders remain challenged by the following competitive issues: changing the perception that Arizona is not a New Economy state, improving the performance of Arizona's public schools, nurturing and exploiting the state's knowledge assets, giving all residents access to technology, and providing a quality of life attractive to knowledge workers.[35]

- The Arizona Partnership for the New Economy (APNE) recommends a four-part strategy for Arizona consisting of four "L's": learning, linking, leading and living. Learning refers to the ability of Arizonans to use New Economy tools to increase and continually improve their knowledge base. Linking focuses on

the need to link all citizens to the Internet and other communications tools. Leading concerns the stimulation of research and development and entrepreneurship, and the promotion of creativity and forward thinking to develop and attract talent and businesses. Living refers to the attraction, retention and growth of talent and businesses via a vibrant economy and high quality of life.[21]

- Obsolete mindsets are the greatest barrier to getting New Economy concepts over to business and community leaders. People are still thinking about the old way of doing business and growing the economy — they keep asking, "What's wrong with being the Number One tourism/golf/real estate place?" They need to understand that it takes the export of goods and services to create wealth and that things are changing very quickly now, so opportunities must be identified and acted upon quickly or we risk being passed by and losing out on opportunities, wealth and choices.[5]

- The biggest challenges for Phoenix are: developing an attractive urban core to lure childless workers downtown, improving educational opportunities for educated workers and their families and generally overcoming a "cultural desert" image. Phoenix does have some opportunities, particularly due to the hangover of high-tech costs in California and elsewhere (e.g., rents are increasing faster than median household income). But this will require some major changes, including: shifting the economic base, new political thinking, developing cheap housing and offices out of older buildings, proximity to airports, cultural amenities and toleration and openness.[25]

- Even as place becomes more important, the New Economy is breaking down geographic barriers between locations and increasing the homogenization of urban environments, leading to banality (e.g., Irvine, California). However, this can be countered by building upon the history and unique character of a place. This raises the question, what is Phoenix's history and what does it have to capitalize on?[34]

- It seems that we do not know how to communicate what we know to business and community leaders or how to give it a sense of urgency. CEOs and policymakers do not read, so we end up writing with headlines. Professionals and citizens must learn how to communicate with our CEO leaders — experience has shown that people understand the New Economy and quality of life if it is packaged properly. An example is study trips by CEOs to innovative cities to show how things work there. Whether we can get everyone to act on our knowledge is unknown, but we have not had enough of an outcry yet.[5]

- The Greater Phoenix Economic Council is the region's official economic development promoter and facilitator, coordinating public and private efforts to promote Greater Phoenix to companies. It is a public-private partnership between Maricopa County, 15 communities within it, and more than 150 private sector partners. It offers a comprehensive range of services, focused particularly on assisting expansion of existing businesses and the location of new businesses.[19]

ABBREVIATIONS

APNE	Arizona Partnership for the New Economy
GPEC	Greater Phoenix Economic Council
MSA	Metropolitan Statistical Area
NAFTA	North American Free Trade Agreement
SAT	Scholastic Aptitude Test

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